

c. Amendments to Claims

1 – 7. (canceled)

8. (currently amended) An integrated circuit, comprising:

a substrate having a top surface;

collector, base, and emitter semiconductor layers of a bipolar transistor, the semiconductor layers forming a vertical sequence on the substrate in which intrinsic portions of two of the layers are sandwiched between the top surface of the substrate and a remaining top one of the layers, the base layer comprising an extrinsic portion that laterally encircles a vertical portion of the top one of ~~said~~ the semiconductor layers; and

a dielectric sidewall being interposed between the vertical portion of the top one of the layers and the extrinsic portion of the base layer; and

wherein ~~either~~ the dielectric sidewall has a thickness of 500 to 1500 angstroms ~~or part of the extrinsic portion of the base layer is located between the substrate and an extrinsic portion of the top one of the layers.~~

9. (canceled)

10. (previously presented) The integrated circuit of claim 8, wherein the extrinsic portion of the base layer extends farther away from the substrate than an interface between the top one of the semiconductor layers and the base layer.

11. (previously presented) The integrated circuit of claim 8, wherein one of the two of the semiconductor layers is a doped region of the substrate.

12. (currently amended) The integrated circuit of claim 8, wherein ~~the~~ a part of the extrinsic portion of the base layer is located between the substrate and the extrinsic portion of the top one of the layers.

13. (previously presented) The integrated circuit of claim 12, further comprising a dielectric layer, a portion of the dielectric layer being located on the extrinsic portion of the base

layer and the extrinsic portion of the top one of the semiconductor layers being located on the dielectric layer.

14. (previously presented) The integrated circuit of claim 12, wherein the extrinsic portion of the base layer extends farther away from the substrate than an interface between the top one of the semiconductor layers and the base layer.

15. (previously presented) The integrated circuit of claim 12, wherein one of the two of the semiconductor layers is a doped region of the substrate.

16. (previously presented) The integrated circuit of claim 8, wherein the top one of the collector, base, and emitter semiconductor layers is epitaxially grown.

17. (previously presented) The integrated circuit of claim 8, wherein the top one of the collector, base, and emitter semiconductor layers is a graded layer.

18. (previously presented) The integrated circuit of claim 8, wherein the top one of the collector, base, and emitter semiconductor layers includes gallium.

19. (previously presented) The integrated circuit of claim 8, wherein the top one of the collector, base, and emitter semiconductor layers includes indium.

20. (previously presented) The integrated circuit of claim 8, wherein the top one of the collector, base, and emitter semiconductor layers includes gallium and indium.

21. (new) An integrated circuit, comprising:
a substrate having a top surface;
collector, base, and emitter semiconductor layers of a bipolar transistor, the semiconductor layers forming a vertical sequence on the substrate in which intrinsic portions of two of the semiconductor layers are sandwiched between the top surface of the substrate and a remaining top one of the semiconductor layers, the base layer comprising an extrinsic portion that laterally encircles a vertical portion of the top one of the semiconductor layers; and

a dielectric sidewall being interposed between the vertical portion of the top one of the semiconductor layers and the extrinsic portion of the base layer; and

wherein part of the extrinsic portion of the base layer is located between the substrate and an extrinsic portion of the top one of the semiconductor layers.

22. (new) The integrated circuit of claim 21, wherein the dielectric sidewall has a thickness of 500 to 1500 angstroms.

23. (new) The integrated circuit of claim 21, wherein the extrinsic portion of the base layer extends farther away from the substrate than an interface between the top one of the semiconductor layers and the base layer.

24. (new) The integrated circuit of claim 21, wherein one of the two of the semiconductor layers includes a doped region of the substrate.

25. (new) The integrated circuit of claim 21, further comprising a dielectric layer, a portion of the dielectric layer being located on the part of the extrinsic portion of the base layer and the extrinsic portion of the top one of the semiconductor layers being located on the dielectric layer.

26. (new) The integrated circuit of claim 21, wherein the top one of the collector, base, and emitter semiconductor layers is an epitaxial layer.

27. (new) The integrated circuit of claim 21, wherein the top one of the collector, base, and emitter semiconductor layers is a graded layer.

28. (new) The integrated circuit of claim 21, wherein the top one of the collector, base, and emitter semiconductor layers includes gallium or indium.